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(54) **SYSTEM AND METHOD FOR ONLINE TRANSACTIONS USING CRYPTOGRAPHIC DIGITAL TOKENS**

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G06Q 20/06 (2012.01)
G06Q 20/36 (2012.01)

(52) **U.S. Cl.**
CPC ... ***G06Q 20/38215*** (2013.01); ***G06Q 20/0658*** (2013.01); ***G06Q 20/3674*** (2013.01); ***G06Q 20/3825*** (2013.01)

(58) **Field of Classification Search**
None
See application file for complete search history.

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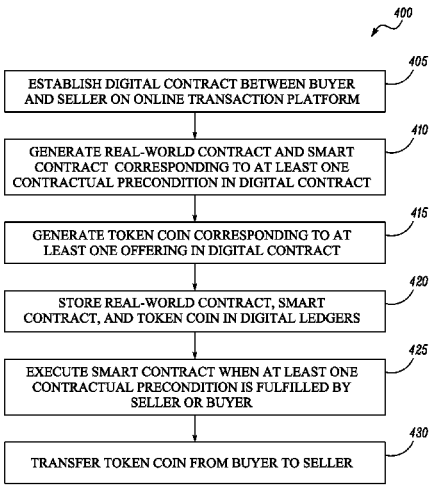
(57) **ABSTRACT**

A system and method for online transactions using cryptographic digital tokens is disclosed. The system includes multiple interconnected transaction servers having corresponding digital ledgers. Each interconnected transaction server may include computer modules to facilitate establishment of a digital contract, generation of a smart contract and a cryptographic digital token corresponding to the digital contract, and storage of the digital contract, the smart contract, and the cryptographic digital token. The computer modules may also facilitate execution of the smart contract and transfer of the cryptographic digital token from a buyer to a seller. The method includes establishing the digital contract, generating the smart contract and the cryptographic digital coin corresponding to the digital contract, and storing the digital contract, the smart contract, and the cryptographic digital coin. The method also includes executing the smart contract and transferring the cryptographic digital coin from the buyer to the seller.

8 Claims, 7 Drawing Sheets



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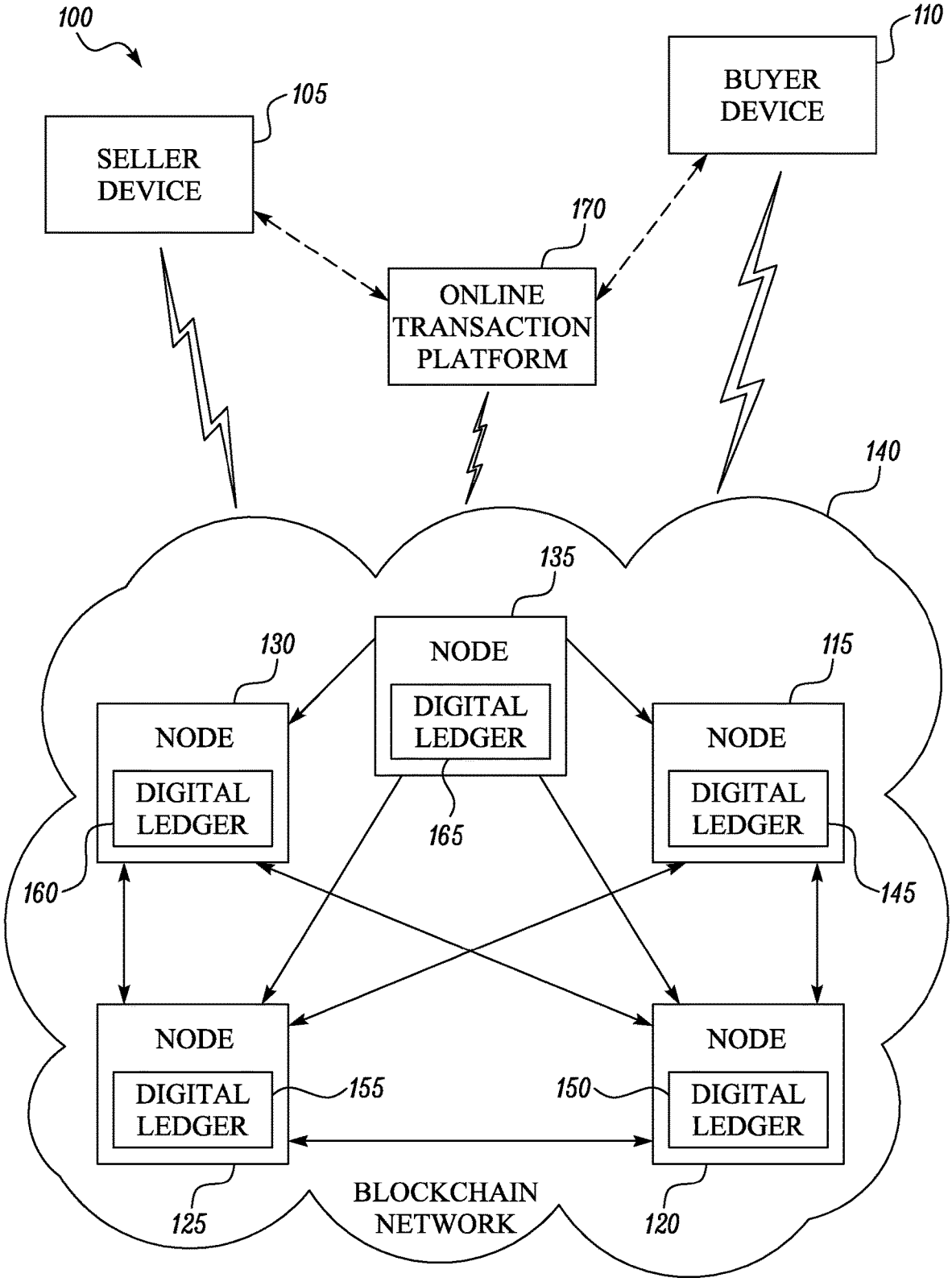
100
105
SELLER DEVICE
110
BUYER DEVICE
170
ONLINE TRANSACTION PLATFORM
140
135
NODE
DIGITAL LEDGER
130
NODE
DIGITAL LEDGER
115
NODE
DIGITAL LEDGER
165
160
145
NODE
DIGITAL LEDGER
155
NODE
DIGITAL LEDGER
150
125
BLOCKCHAIN NETWORK
120

FIG. 1

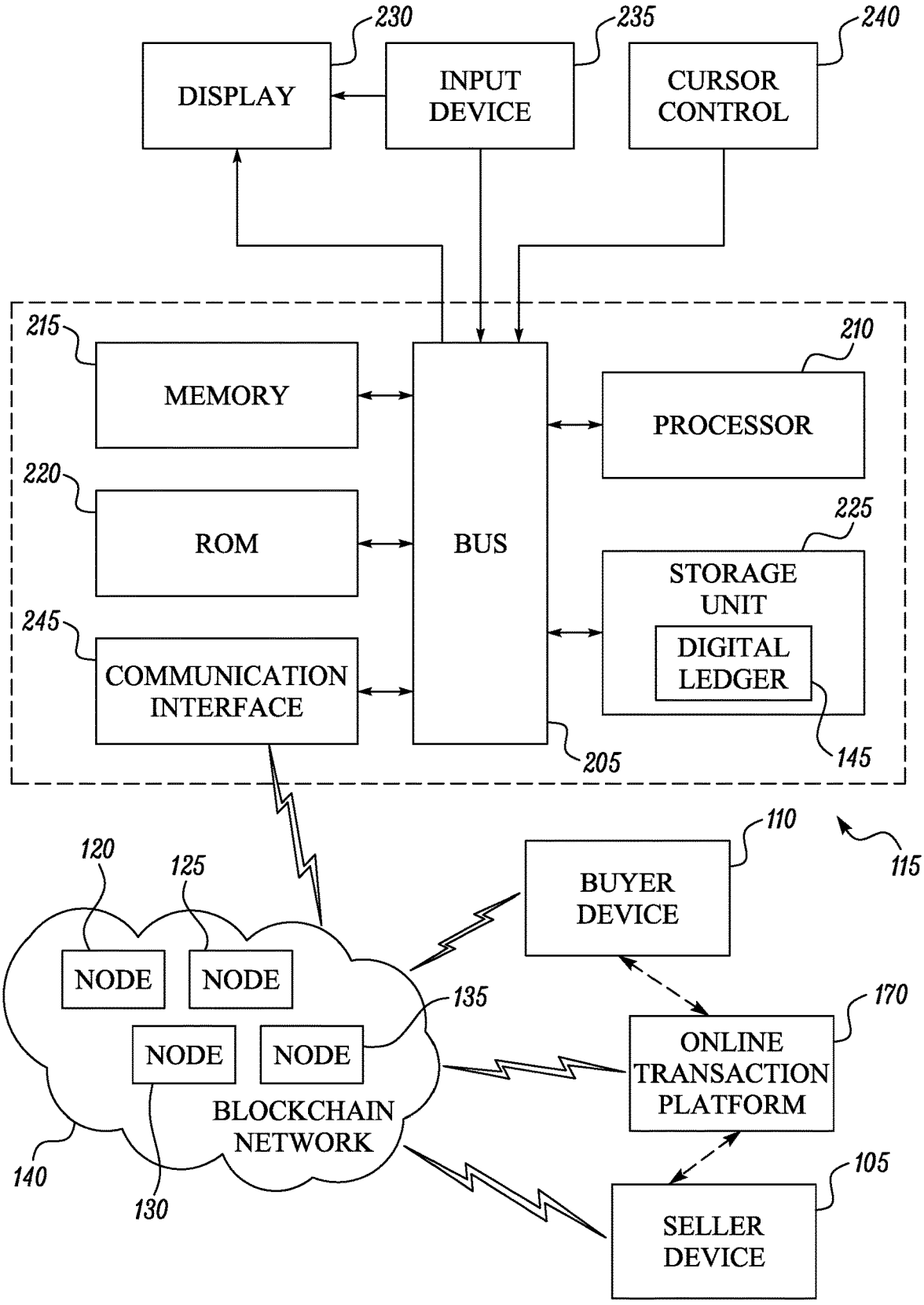
230
235
240
DISPLAY
INPUT DEVICE
CURSOR CONTROL
215
210
MEMORY
PROCESSOR
220
225
ROM
BUS
STORAGE UNIT
DIGITAL LEDGER
245
COMMUNICATION INTERFACE
205
145
110
115
120
125
BUYER DEVICE
NODE
NODE
135
170
NODE
NODE
ONLINE TRANSACTION PLATFORM
BLOCKCHAIN NETWORK
140
130
105
SELLER DEVICE

FIG. 2

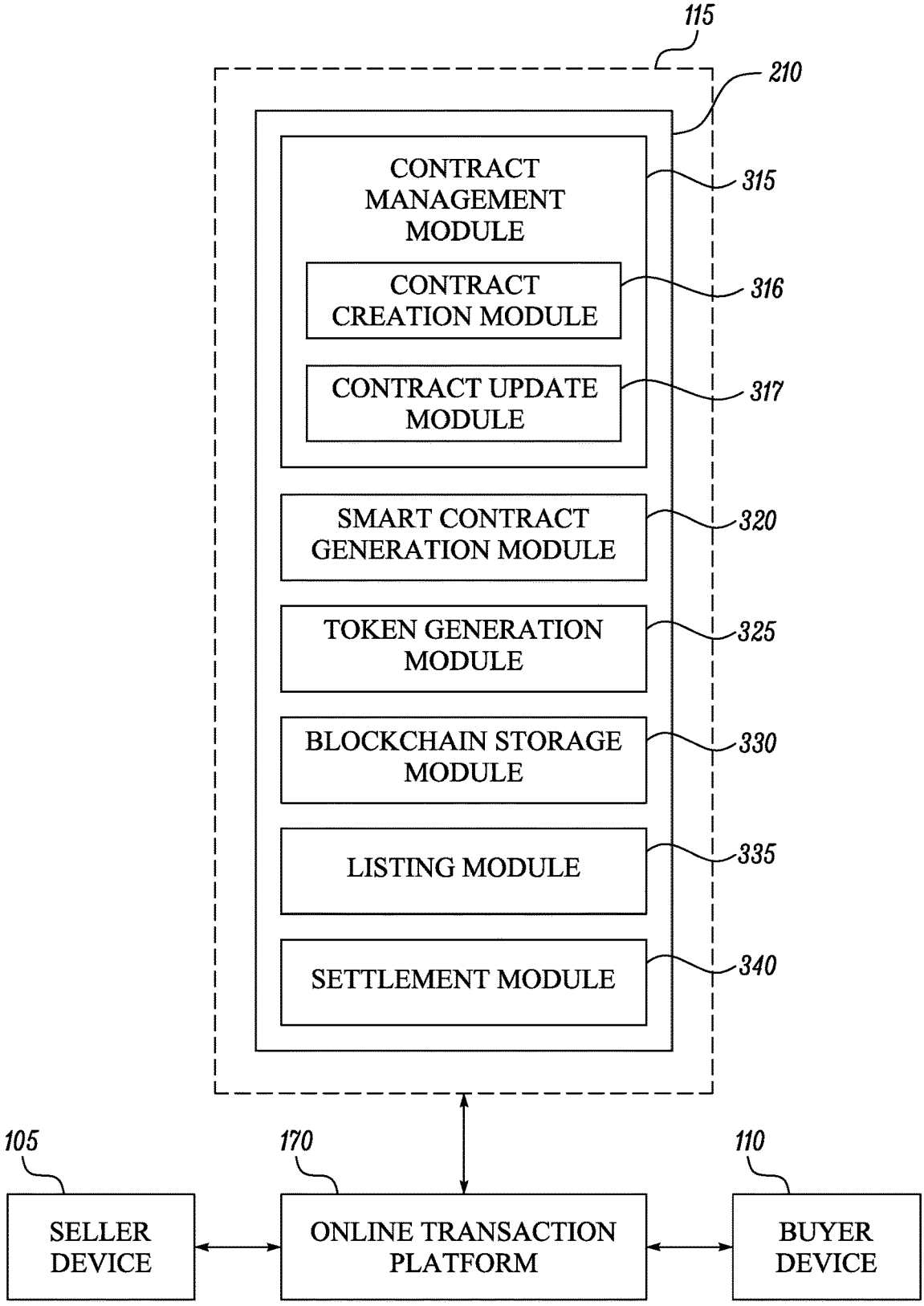
115
210
CONTRACT MANAGEMENT MODULE
315
CONTRACT CREATION MODULE
316
CONTRACT UPDATE MODULE
317
SMART CONTRACT GENERATION MODULE
320
TOKEN GENERATION MODULE
325
BLOCKCHAIN STORAGE MODULE
330
LISTING MODULE
335
SETTLEMENT MODULE
340
105
170
110
SELLER DEVICE
ONLINE TRANSACTION PLATFORM
BUYER DEVICE

FIG. 3

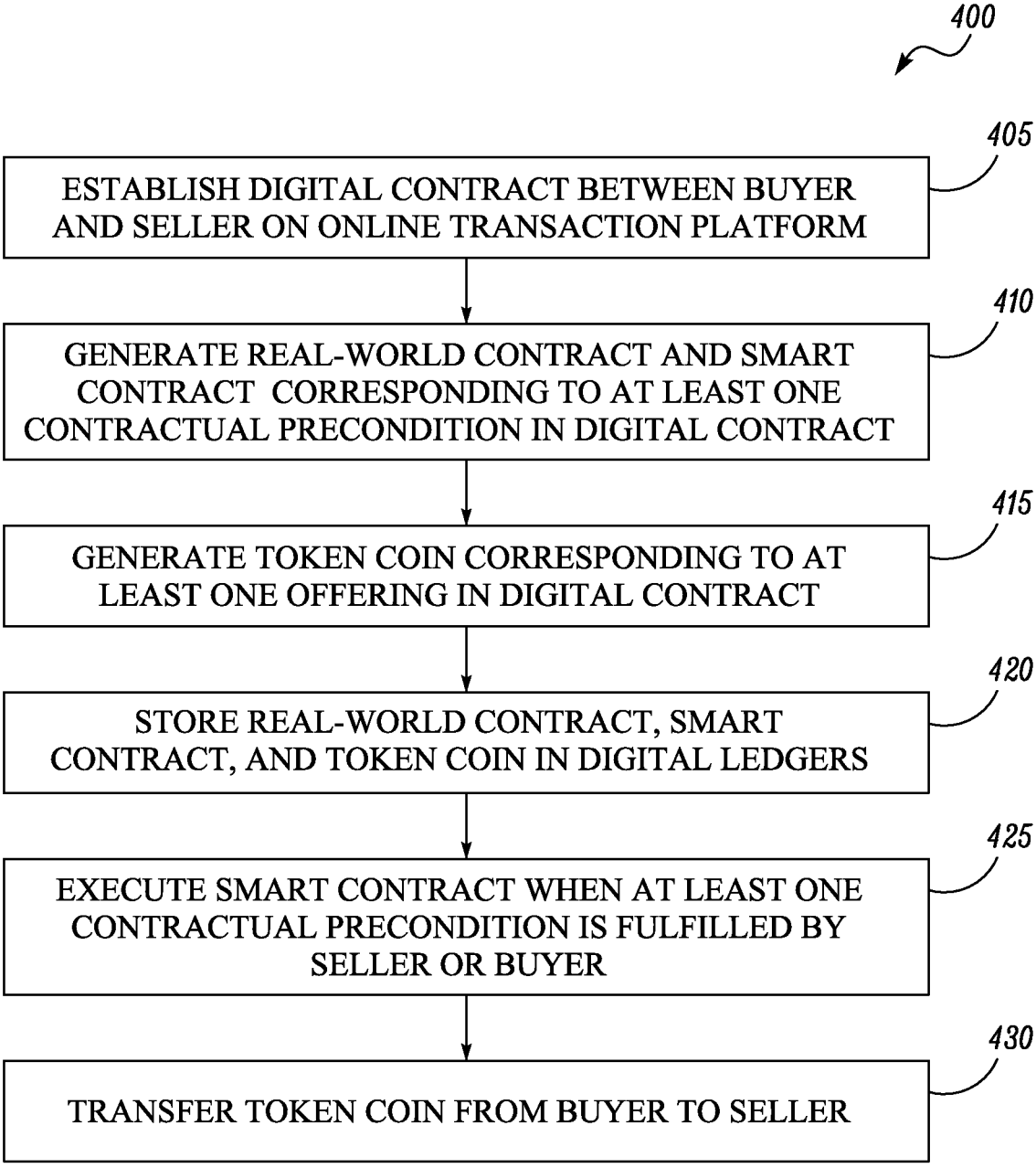
400
405
ESTABLISH DIGITAL CONTRACT BETWEEN BUYER AND SELLER ON ONLINE TRANSACTION PLATFORM
410
GENERATE REAL-WORLD CONTRACT AND SMART CONTRACT CORRESPONDING TO AT LEAST ONE CONTRACTUAL PRECONDITION IN DIGITAL CONTRACT
415
GENERATE TOKEN COIN CORRESPONDING TO AT LEAST ONE OFFERING IN DIGITAL CONTRACT
420
STORE REAL-WORLD CONTRACT, SMART CONTRACT, AND TOKEN COIN IN DIGITAL LEDGERS
425
EXECUTE SMART CONTRACT WHEN AT LEAST ONE CONTRACTUAL PRECONDITION IS FULFILLED BY SELLER OR BUYER
430
TRANSFER TOKEN COIN FROM BUYER TO SELLER

FIG. 4

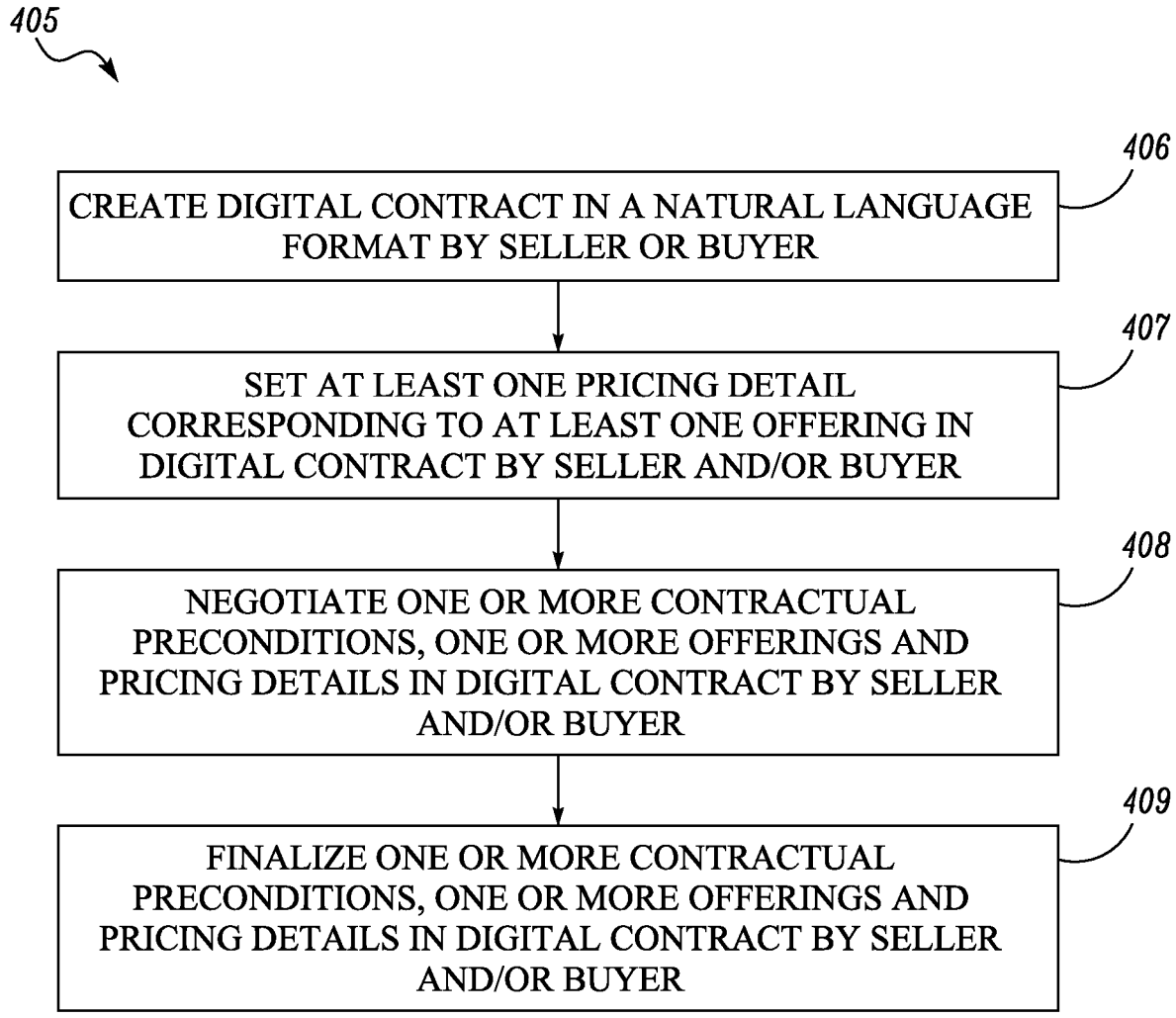
405
406
CREATE DIGITAL CONTRACT IN A NATURAL LANGUAGE FORMAT BY SELLER OR BUYER
407
SET AT LEAST ONE PRICING DETAIL CORRESPONDING TO AT LEAST ONE OFFERING IN DIGITAL CONTRACT BY SELLER AND/OR BUYER
408
NEGOTIATE ONE OR MORE CONTRACTUAL PRECONDITIONS, ONE OR MORE OFFERINGS AND PRICING DETAILS IN DIGITAL CONTRACT BY SELLER AND/OR BUYER
409
FINALIZE ONE OR MORE CONTRACTUAL PRECONDITIONS, ONE OR MORE OFFERINGS AND PRICING DETAILS IN DIGITAL CONTRACT BY SELLER AND/OR BUYER

FIG. 5

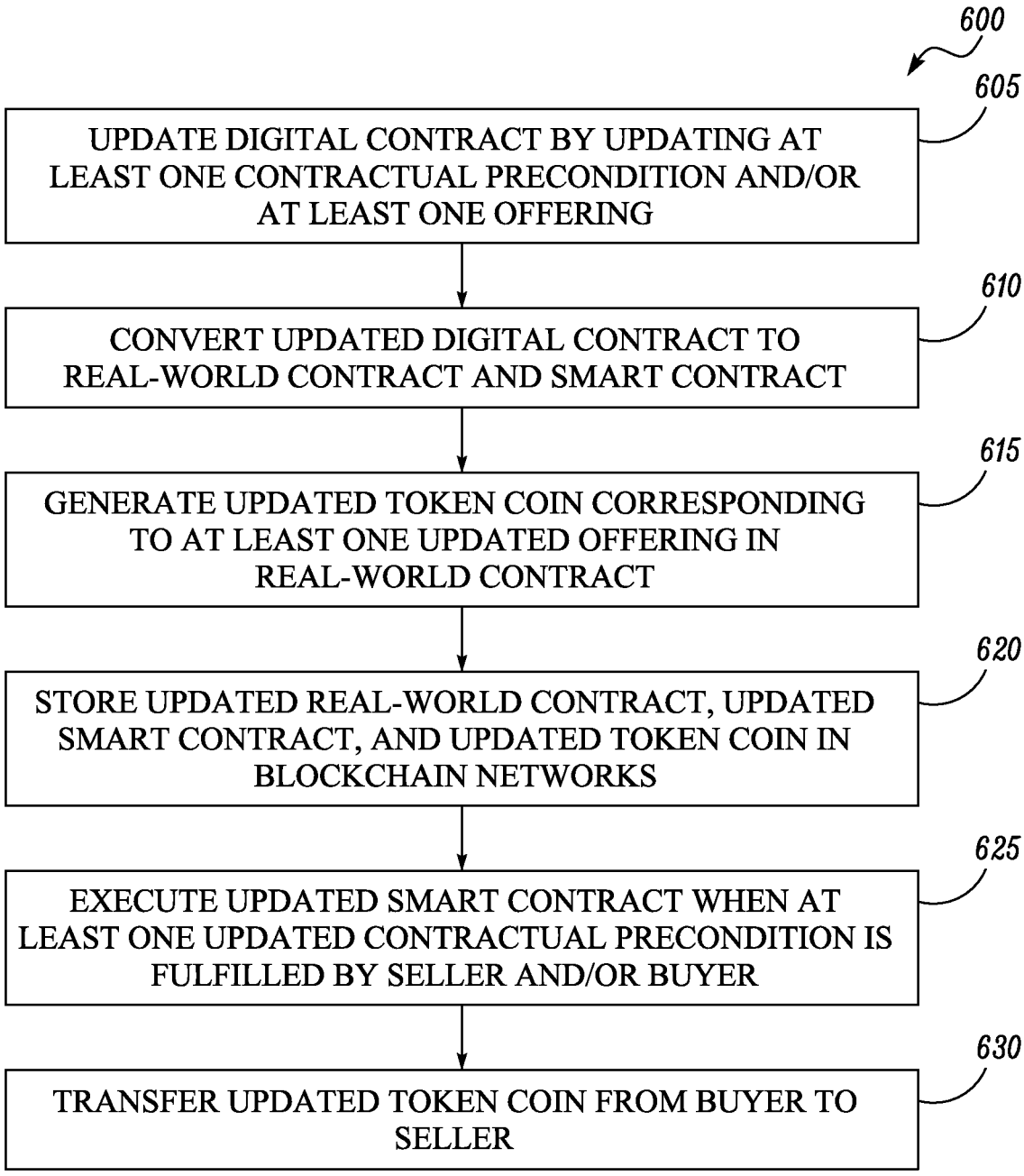
600
605
UPDATE DIGITAL CONTRACT BY UPDATING AT LEAST ONE CONTRACTUAL PRECONDITION AND/OR AT LEAST ONE OFFERING
610
CONVERT UPDATED DIGITAL CONTRACT TO REAL-WORLD CONTRACT AND SMART CONTRACT
615
GENERATE UPDATED TOKEN COIN CORRESPONDING TO AT LEAST ONE UPDATED OFFERING IN REAL-WORLD CONTRACT
620
STORE UPDATED REAL-WORLD CONTRACT, UPDATED SMART CONTRACT, AND UPDATED TOKEN COIN IN BLOCKCHAIN NETWORKS
625
EXECUTE UPDATED SMART CONTRACT WHEN AT LEAST ONE UPDATED CONTRACTUAL PRECONDITION IS FULFILLED BY SELLER AND/OR BUYER
630
TRANSFER UPDATED TOKEN COIN FROM BUYER TO SELLER

FIG. 6

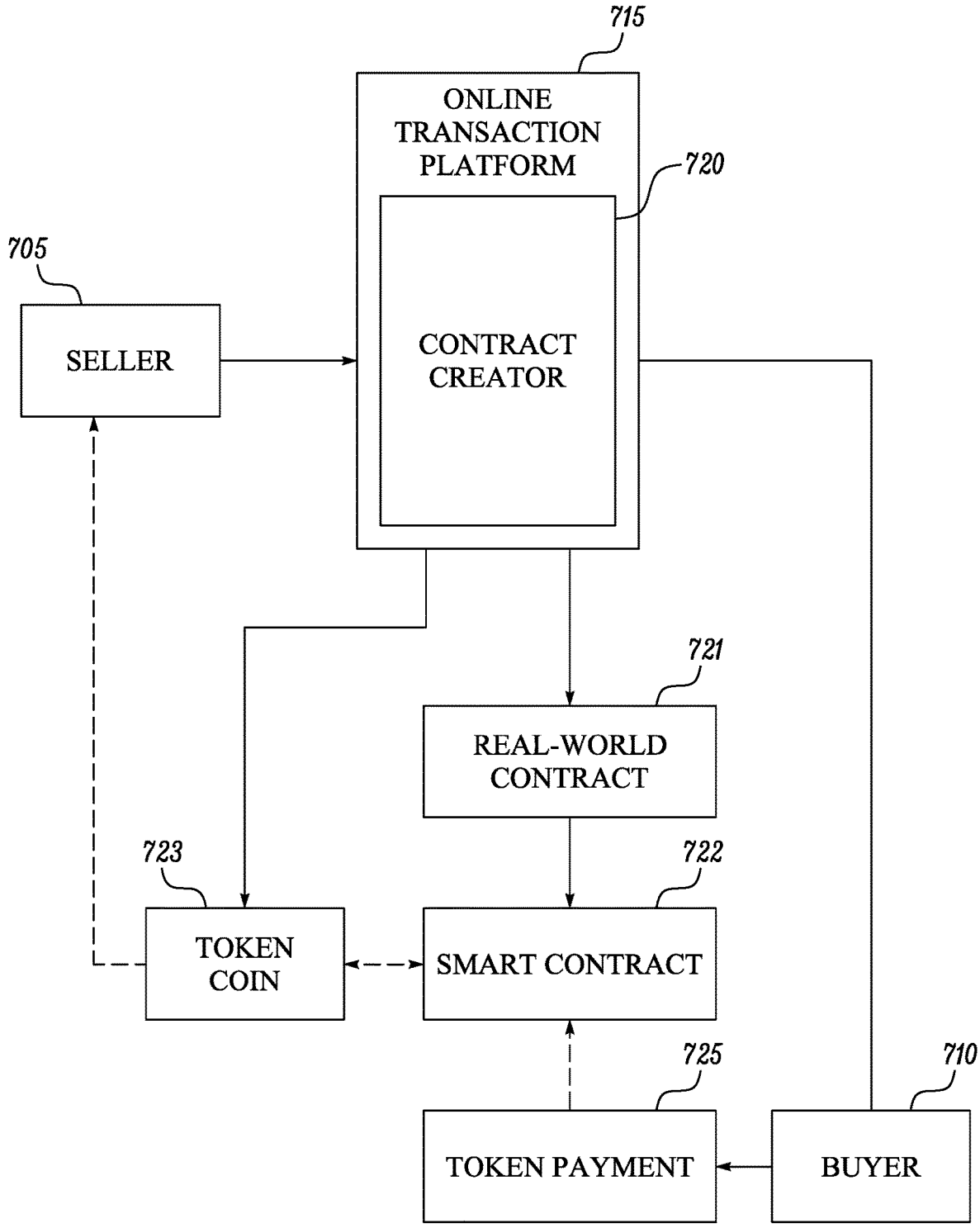
715
ONLINE TRANSACTION PLATFORM
720
CONTRACT CREATOR
705
SELLER
721
REAL-WORLD CONTRACT
723
TOKEN COIN
722
SMART CONTRACT
725
TOKEN PAYMENT
710
BUYER

FIG. 7

SYSTEM AND METHOD FOR ONLINE TRANSACTIONS USING CRYPTOGRAPHIC DIGITAL TOKENS

CROSS REFERENCE TO RELATED APPLICATIONS

This is the U.S. National Stage of International Application No. PCT/IB2020/058759 filed Sep. 21, 2020, which is to be published in English under PCT Article 21(2), which in turn claims the benefit of India Application No. 201911041279, filed Oct. 11, 2019, both of which are hereby incorporated herein by reference.

FIELD OF INVENTION

The present disclosure relates in general to the field of online transactions and more particularly, to use of cryptographic digital tokens generated from digital contracts for online transactions.

BACKGROUND OF THE INVENTION

In recent times, individuals and businesses rely primarily on online transactions to negotiate deals, transfer money, make purchases, offer services, and sell products. Typically, the online transactions between two or more entities, such a seller and a buyer, are facilitated by third party mobile and/or web applications. Oftentimes, the third-party mobile and/or web applications may not provide a private interaction between the seller and the buyer. In some instances, the seller and/or the buyer may also intend to establish a digital contract or agreement that is legally valid and binding prior to conducting the online transactions.

More recently, with an advent of smart contracts deployed on blockchain networks, peer-to-peer private interactions, agreements, and asset exchanges have been made possible. A blockchain network is a decentralised network having a plurality of nodes or servers, wherein each node includes a digital ledger. The digital ledger holds timestamped records of the online transactions such as date and time of the online transactions, type of the online transactions, details of the online transactions, and other details related to the online transactions. Each node may synchronise the digital ledger with respect to other nodes in the blockchain network and validate an authenticity of each online transaction. A smart contract consists of one or more computer programs that may be automatically executed on a specific date and time.

However, problem arises when the seller and the buyer may need to negotiate different pricing details, terms, and/or conditions for a service or a product in the digital contract. In some instances, the digital contract may also need to be modified multiple times based on the negotiations between the buyer and the seller. Recording the negotiations and tracking the modifications may be also necessary to review multiple versions of the digital contract. Further, the seller and the buyer may also prefer a private, secure, and direct interaction with each other during the negotiation and the modification of the digital contract. In some instances, the online transactions may also require currency conversions for payments and settlements to be made. In such instances, facilitating currency exchange through alternate financial instruments such as the cryptographic tokens may be needed for the currency conversions and to ensure legality of the online transactions between the seller and the buyer.

SUMMARY OF THE INVENTION

The embodiments of the present disclosure described herein provide a system and a method for use of cryptographic digital tokens generated from a digital contract for online transactions.

An example of a system for online transactions includes a plurality of interconnected transaction servers. Each interconnected transaction server includes a digital ledger to keep timestamped records of the online transactions. The system may also include a first electronic device of a seller that is in communication with at least one interconnected transaction server of the plurality of interconnected transaction servers via a network. Further, the system may also include a second electronic device of a buyer that is in communication with the at least one interconnected transaction server of the plurality of interconnected transaction servers via the network. In addition, the system may include an online transaction platform provided by the at least one interconnected transaction server to facilitate the online transactions between the seller and the buyer. Each interconnected transaction server may include a contract creation module that facilitates establishment of a digital contract between the seller and the buyer on the online transaction platform via the first electronic device and the second electronic device respectively. The digital contract may include one or more contractual preconditions and one or more offerings to be exchanged between the seller and the buyer. Each interconnected transaction server may also include a smart contract generation module to generate a smart contract that includes one or more computer instructions corresponding to at least one contractual precondition of the one or more contractual preconditions. Further, each interconnected transaction server may include a token generation module to generate a cryptographic digital token corresponding to at least one offering of the one or more offerings in the digital contract. In addition, each interconnected transaction server may include a blockchain storage module to create and store timestamped records of the digital contract, the smart contract, and the cryptographic digital token in the digital ledger of the at least one interconnected transaction server and the plurality of interconnected transaction servers simultaneously. Each interconnected transaction server may also include a settlement module to execute the smart contract when the at least one contractual precondition is fulfilled by the seller and/or the buyer. The settlement module may also facilitate an online transfer of the cryptographic digital token from a payer digital wallet of the buyer to a payee digital wallet of the seller.

An example for a method for online transactions includes establishing a digital contract between a seller and a buyer. The establishment of the digital contract may include creating the digital contract by the seller or the buyer. The digital contract may include one or more contractual preconditions and one or more offerings to be exchanged between the seller and the buyer. The method also includes generating a smart contract that includes one or more computer instructions corresponding to at least one contractual precondition of the one or more contractual preconditions. Further, the method includes generating a cryptographic digital token corresponding to at least one offering of the one or more offerings in the digital contract. In addition, the method includes storing timestamped records of the digital contract, the smart contract, the cryptographic digital token in a plurality of digital ledgers simultaneously. Further, the method includes executing the smart contract when the at least one contractual precondition is fulfilled by

the seller and/or the buyer. The method also includes transferring the cryptographic digital token from a payer digital account of the buyer to a payee digital account of the seller upon execution.

BRIEF DESCRIPTION OF DRAWINGS

The accompanying drawings, similar reference numerals, may refer to identical or functionally similar elements. These reference numerals are used in the detailed description to illustrate various embodiments and to explain various aspects and advantages of the present disclosure.

FIG. **1** is a schematic block diagram of an environment, in accordance with which various embodiments of the present disclosure may be implemented;

FIG. **2** is a schematic block diagram of a node in a blockchain network, in accordance with an embodiment of the present disclosure;

FIG. **3** is a schematic block diagram of one or more computer modules in a processor of the node of FIG. **2**, in accordance to the embodiment of the present disclosure;

FIG. **4** is a flowchart of a method for online transactions, in accordance with the embodiment of the present disclosure;

FIG. **5** is a flowchart of a method for establishing a digital contract, in accordance with the embodiment of the present disclosure;

FIG. **6** is a flowchart of a method for online transactions by updating the digital contract of FIG. **5**, in accordance with the embodiment of the present disclosure; and

FIG. **7** is an exemplary illustration of an online transaction between a seller and a buyer via an online transaction platform in accordance with the embodiment of the present disclosure.

Persons skilled in the art will appreciate that elements in the figures are illustrated for simplicity and clarity and may have not been drawn to scale. For example, the dimensions of some of the elements in the figure may be exaggerated relative to other elements to help to improve understanding of various embodiments of the present disclosure.

DETAILED DESCRIPTION

FIG. **1** is a schematic block diagram of an environment **100**, in accordance with which various embodiments may be implemented. The environment **100** includes electronic devices, for example, a seller device **105** of a seller and a buyer device **110** of a buyer, in communication with a plurality of interconnected transaction servers **115-135** via a blockchain network **140**. The interconnected transaction servers **115-135** are herein referred to as "nodes" **115-135**. Each interconnected transaction server, for example, **115**, **120**, **125**, **130**, and **135**, is herein referred to as a "node". The seller device **105** and the buyer device **110** correspond to electronic devices used by the seller and the buyer respectively. Examples of the electronic devices include, but are not limited to, computers, laptops, mobile devices, handheld devices, personal digital assistants (PDAs), tablet personal computers, digital notebook, and similar electronic devices. The nodes **115-135** may be interconnected via the blockchain network **140**. The blockchain network **140** may include communication networks such as, but not limited to, a Local Area Network (LAN), a Wireless Local Area Network (WLAN), a Wide Area Network (WAN), internet and a Small Area Network (SAN). The nodes **115-135** interconnected by means of the communication networks corresponds to the blockchain network **140**. Further, the nodes **115-135** may include digital ledgers **145-165** respectively to store timestamped records of the online transactions between the seller and the buyer. The nodes **115-135** may also provide an online transaction platform **170**, to facilitate the online transactions between the seller and the buyer via the seller device **105** and the buyer device **110** respectively. The online transaction platform **170** may be provided as a stand-alone application and/or a web application on the seller device **105** and the buyer device **110** respectively.

In some embodiments, the nodes **115-135** may store the timestamped records of the online transactions in the digital ledgers **145-165** corresponding to one or more actions performed by a seller using the seller device **105** and/or a buyer using the buyer device **110**. Examples of the actions include, but are not limited, creating a digital contract, uploading digital assets, and offering services or products for sale. The timestamped records may include information such as, but not limited to, date and time of the creation of the digital contract, date and time of updates made to the digital contract, name of the seller and/or the buyer involved in the digital contract, financial details corresponding to the digital contract, payment made by the buyer, and date and time of payments made by the buyer and/or received by the seller.

In some embodiments, the nodes **115-135** may assign unique numeric or alphanumeric hash values corresponding the timestamped records in order to track and uniquely identify the timestamped records. The nodes **115-135** may also encrypt the timestamped records of the online transactions prior to storing the timestamped records in the digital ledgers **145-165** respectively. The nodes **115-135** may employ different encryption methods, such as, for example, Advanced Encryption Standard (AES), Triple Data Encryption Standard (3DES), Pretty Good Privacy (PGP), Twofish, Ron Rivest, Adi Shamir and Len Adelman (RSA). For purposes of clarity and understanding, the RSA encryption method will be considered in the present disclosure. The RSA method involves use of cryptographic keys to store the timestamped records in the digital ledgers **145-165** and/or share the timestamped records between the nodes **115-135** via the blockchain network **140**. The cryptographic keys may include public keys, private keys, or a combination of both public and private keys, the combination referred to as a "key-pair". The cryptographic keys or key-pairs may be used to keep the stored timestamped records digitally locked for security and privacy. The seller and/or the buyer may also share the cryptographic keys or key pairs with each other privately in order to decrypt and view the stored timestamped records using the cryptographic keys or key-pairs. In some embodiments, the cryptographic keys or key pairs may also uniquely identify the timestamped records in the digital ledgers **145-165**.

In some embodiments, a node, for example, the node **115**, may share the encrypted timestamped records in with other nodes, for example, nodes **120-135**, using the cryptographic keys and the numeric or alphanumeric hash values associated with the cryptographic keys. The encrypted timestamped records may be stored in the digital ledgers **145-165** simultaneously after a consensus between the nodes **115-135** is ascertained. The consensus may be ascertained by validating the numeric or alphanumeric hash values and cryptographic keys at the nodes **115-135** independently, verifying accuracy of the timestamped records, and aggregating responses at each node, for example, the node **115**. The sharing and verification of the timestamped records at the nodes **115-135** respectively ensures privacy, security, accuracy, and validation of the timestamped records at the nodes

115-165. Accordingly, each digital ledger, for example, the digital ledger **145** may include similar and up-to-date time-stamped records of the online transactions as the other digital ledgers, for example, **150-165** at a specific point in time.

In some embodiments, the blockchain network **140** may also facilitate private and secure online transactions, herein referred to as "peer-to-peer" transactions, between the seller device **105** and the buyer device **110** via the online transaction platform **170**. Examples of the online transactions include, but are not limited to, sale and/or transfer of digital assets such as media files, cryptocurrency, cryptographic tokens, currency, and digital contracts.

It may be apparent that various alternative arrangements of the nodes **115-135**, the digital ledgers **145-165**, and the electronic devices, such as the seller device **105** and buyer device **110** may be implemented to facilitate the online transactions between the seller and the buyer. For example, in some embodiments, the environment **100** may include multiple blockchain networks with multiple interconnected nodes similar to the blockchain network **140** and the nodes **115-135** respectively described herein.

FIG. **2** is a block diagram of the node **115** in the blockchain network **140** of FIG. **1**. The node **115** includes a bus **205** or other communication mechanism for communicating information, and a processor **210** coupled with the bus **205** for processing information. The node **115** also includes a memory **215**, such as a random-access memory (RAM) or other dynamic storage device, coupled to the bus **205** for storing information and instructions to be executed by the processor **210**. The memory **215** can be used for storing temporary variables or other intermediate information during execution of instructions to be executed by the processor **210**. The node **115** further includes a read only memory (ROM) **220** or other static storage device coupled to bus **205** for storing static information and instructions for processor **210**. A storage unit **225**, such as a magnetic disk or optical disk, is provided and coupled to the bus **205**. The storage unit **225** may also include a digital ledger **145** for storing timestamped records of online transactions between a seller and a buyer on an online transaction platform **170** provided by the node **115** and/or other nodes **120-135** in the blockchain network **140** as shown in FIG. **1**.

The node **115** can be coupled via the bus **205** to a display **230**, such as a cathode ray tube (CRT), and liquid crystal display (LCD) for displaying information to a user. An input device **235**, including alphanumeric and other keys, is coupled to bus **205** for communicating information and command selections to the processor **210**. Another type of user input device is a cursor control **240**, such as a mouse, a trackball, or cursor direction keys for communicating direction information and command selections to the processor **210** and for controlling cursor movement on the display **230**. The input device **235** can also be included in the display **230**, for example a touch screen.

Various embodiments are related to the use of node **115** for implementing the techniques described herein. In one embodiment, the techniques are performed by the node **115** in response to the processor **210** executing instructions included in the memory **215**. Such instructions can be read into the memory **215** from another machine-readable medium, such as the storage unit **225**. Execution of the instructions included in the memory **215** causes the processor **210** to perform the process steps described herein.

The term "machine-readable medium" as used herein refers to any medium that participates in providing data that causes a machine to operate in a specific fashion. In an embodiment implemented using the node **115**, various machine-readable medium is involved, for example, in providing instructions to the processor **210** for execution. The machine-readable medium can be a storage media. Storage media includes both non-volatile media and volatile media. Non-volatile media includes, for example, optical or magnetic disks, such as storage unit **225**. Volatile media includes dynamic memory, such as the memory **215**. All such media must be tangible to enable the instructions carried by the media to be detected by a physical mechanism that reads the instructions into a machine.

Common forms of machine-readable medium include, for example, a floppy disk, a flexible disk, hard disk, magnetic tape, or any other magnetic medium, a CD-ROM, any other optical medium, punch cards, paper-tape, any other physical medium with patterns of holes, a RAM, a PROM, and EPROM, a FLASH-EPROM, any other memory chip or cartridge.

In another embodiment, the machine-readable medium can be a transmission media including coaxial cables, copper wire and fibre optics, including the wires that comprise the bus **205**. Transmission media can also take the form of acoustic or light waves, such as those generated during radio-wave and infra-red data communications. Examples of machine-readable medium may include but are not limited to a carrier wave as describer hereinafter or any other medium from which the node **115** can read, for example online software, download links, installation links, and online links. For example, the instructions can initially be carried on a magnetic disk of a remote computer. The remote computer can load the instructions into its dynamic memory and send the instructions over a telephone line using a modem. A modem local to the node **115** can receive the data on the telephone line and use an infra-red transmitter to convert the data to an infra-red signal. An infra-red detector can receive the data carried in the infra-red signal and appropriate circuitry can place the data on the bus **205**. The bus **205** carries the data to the memory **215**, from which the processor **210** retrieves and executes the instructions. The instructions received by the memory **215** can optionally be stored on storage unit **225** either before or after execution by the processor **210**. All such media must be tangible to enable the instructions carried by the media to be detected by a physical mechanism that reads the instructions into a machine.

The node **115** also includes a communication interface **245** coupled to the bus **205**. The communication interface **245** provides a two-way data communication coupling to the network **140**. For example, the communication interface **245** can be an integrated service digital network (ISDN) card or a modem to provide a data communication connection to a corresponding type of telephone line. As another example, the communication interface **245** can be a local area network (LAN) card to provide a data communication connection to a compatible LAN. Wireless links can also be implemented. In any such implementation, the communication interface **245** sends and receives electrical, electromagnetic or optical signals that carry digital data streams representing various types of information.

In some embodiments, the processor **210** of the node **115** may be capable of executing the one or more predefined computer instructions in order to perform one or more functions. Referring to FIGS. **2-3**, the processor **210** may also include one or more computer modules **315-340** to perform the one or more functions. The processor **210** may include a contract management system **315** having a contract creation module **316** and a contract update module **317**. The

processor **210** may also include a smart contract generation module **320**, a token generation module **325**, a blockchain storage module **330**, a listing module **335**, and a settlement module **140**. The computer modules **315-340**, may be proprietary software programs included in the node **115** and/or the nodes **120-135** (see FIG. **1**) to perform the one or more functions.

The contract creation module **316** facilitates establishment of a digital contract between the seller and the buyer on the online transaction platform **170** provided by the node **115**. The seller and/or the buyer may establish the digital contract via the seller device **105** and/or the buyer device **110** respectively. The online transaction platform **170** may be provided to the seller and/or the buyer via a stand-alone application or a web application on the seller device **105** and the buyer device **110** respectively. In some embodiments, the contract creation module **316** may enable the seller or the buyer to create the digital contract in a natural language format on the online transaction platform **170**. The contract creation module **316** may further enable the seller and/or the buyer to include one or more contractual preconditions and one or more offerings in the digital contract in the natural language format via the online transaction platform **170**. Examples of the one or more contractual preconditions include, but are not limited to, terms of use and conditions set by the seller and/or the buyer, date and time of delivery of products and/or services, date and time of payments to be made, privacy policy, and additional requirements set by the seller and/or the buyer in the digital contract. Examples of the one or more offerings include, but are not limited to, products and/or services offered by the seller, price of the products and/or services set by the seller, offer made by the buyer corresponding the products and/or services provided by the seller, and/or additional perks or benefits offered by the seller or the buyer. The contract creation module **316** may enable the seller or the buyer to set pricing details corresponding to one or more offerings, such as the products and/or services in the contract. The contract creation module **316** may also enable the seller or the buyer to create a single digital contract for one offering or multiple offerings. For example, the contract creation module **316** may enable the seller to create one digital contract for multiple services or a single service. Further, the contract creation module **316** may also enable the seller and/or the buyer to create multiple digital contracts with different pricing details corresponding to multiple offerings respectively. The one or more contractual preconditions, the one or more offerings, and the one or more pricing details corresponding to the one or more offerings will be herein collectively referred to as "contract details" in the present disclosure.

In some embodiments, the contract creation module **316** may enable the seller and the buyer to negotiate the contract details online. The contract creation module **316** may enable the seller and the buyer to negotiate the one or more contractual preconditions, the one or more offerings, and/or the pricing details in the contract details. In one embodiment, the contract creation module **316** may enable the online negotiation by means of software applications such as, but not limited to, chat, contract notes, and contract editing tools provided on the online transaction platform **170** (see FIG. **1**). In another embodiment, the contract creation module **316** may facilitate the online negotiation by means of real-time editing of the digital contract by the seller and/or the buyer during the creation of the digital contract on the online transaction platform **170**. In yet another embodiment, the contract creation module **316** may facilitate the online negotiation by means of mutual exchange of the digital contract between the seller and buyer in one or more digital formats, such as, for example, a portable document format on the online transaction platform **170**. In some embodiments, the contract creation module **316** may facilitate encryption of the online negotiation for privacy and security. For instances when the contract creation module **316** encrypts the online negotiation, the seller and the buyer may need cryptographic keys or key pairs to access and/or edit the digital contract. In some embodiments, the contract creation module **316** may also require the seller and/or the buyer to pre-set a personal identification number in addition to the cryptographic keys or key pairs to access and/or edit the digital contract. Further, the contract creation module **316** enable the seller or the buyer to change the contract details in the digital contract during the online negotiation. Further, the contract creation module **316** enables the seller and/or the buyer to finalise the contract details based on the online negotiation and establish the digital contract.

The smart contract generation module **320** facilitates automatic conversion of the contract details included in the digital contract from the natural language format to a legal format having one or more contractual clauses. The smart contract generation module **320** may employ template automation techniques to convert the contract details in the natural language format to the legal format. In some embodiments, the smart contract generation module **320** may interact with one or more application programming interfaces (APIs) to implement the template automation techniques. The digital contract in the legal format having the one or more contractual clauses will herein be referred to as a "real-world" contract in the present disclosure. The real-world contract generated as a result of the automatic conversion by the smart contract generation module **320**, may also enable the seller or the buyer to comply with legal requirements as applicable to one or more geographical locations associated with the seller and/or the buyer.

The smart contract generation module **320** also generates a smart contract corresponding to at least one contractual precondition of the one or more contractual preconditions in the contract details included in the real-world contract. The smart contract may include one or more computer instructions generated corresponding to the contractual precondition included in the real-world contract. For example, the smart contract may include a computer instruction to send an online reminder to the seller and/or the buyer on a specified date and time as included in the real-world contract.

The token generation module **325** generates a cryptographic digital token, herein referred to as a "token coin", corresponding to at least one offering of the one or more offerings in the contract details included in the real-world contract. The token coin may be generated corresponding to the pricing details of the offering in the real-world contract. In some embodiments, the token generation module **325** may assign a symbolic monetary value equivalent to a cumulative price of the offerings in the real-world contract to the token coin.

The blockchain storage module **330** creates timestamped records of the real-world contract, the smart contract, and the token coin. The blockchain storage module **330** may assign unique numeric or alphanumeric hash values corresponding to the timestamped records of the real-world contract, the smart contract, and the token coin respectively in order to group, track, and uniquely identify the timestamped records. In some embodiments, the blockchain storage module **330** may assign a common unique numeric or alphanumeric hash value corresponding to the timestamped records of the real-world contract, the smart con-

tract, and the token coin upon establishing the digital contract via the contract creation module **316**. The blockchain storage module **330** may also employ one or more encryption methods to encrypt the timestamped records of real-world contract, the smart contract, and the token coin. The blockchain storage module **330** may also generate the cryptographic key-pairs corresponding to the encrypted timestamped records of the real-world contract to enable the seller and/or the buyer to access the real-world contract privately and securely. In some embodiments, the blockchain storage module **330** may randomise the contract details in the real-world contract during encryption.

The blockchain storage module **330** may store the encrypted timestamped records in the digital ledger **145** of the node **115**. In some embodiments, blockchain storage module **330** may share the encrypted timestamped records and the numeric or alphanumeric hash values associated with the encrypted timestamped records in with other nodes, for example, nodes **120-135** (see FIG. **1**). The encrypted timestamped records may also be stored and/or updated in the digital ledgers **145-165** (see FIG. **1**) simultaneously after a consensus between the nodes **115-135** is ascertained. The consensus may be ascertained by the blockchain storage module **330** through validation of the numeric or alphanumeric hash values and the cryptographic keys at the nodes **120-135** independently, verification of accuracy of the timestamped records at the nodes **120-135** independently, and aggregating responses related to the validation and the verification from the nodes **120-135**.

The listing module **335** publicly lists the real-world contract and/or the token coin generated corresponding to the real-world contract on the online transaction platform **170** after the encrypted timestamped records are stored by the blockchain storage module **325**. The listing module **335** may also present a monetary valuation of the real-world contract as determined by the symbolic monetary value of the token coin in the public listing. The listing module **335** may also send the encrypted real-world contract to the seller and/or buyer directly for private access using the cryptographic key-pairs. In some embodiments, the listing module **335** may send the encrypted real-world contract to a digital wallet of the seller and/or the buyer.

The settlement module **340** executes the smart contract when the at least one contractual precondition is fulfilled by the seller and/or the buyer. Further, the smart contract may be executed automatically on a specific date and time as included in the real-world contract. Examples of the fulfilment of the contractual precondition include, but are not limited to, payments made by the buyer, services rendered by the seller, products delivered by the seller, or confirmation by the buyer of the products and/services provided by the seller. Further, the settlement module **340** may facilitate online transfer of the token coin from a payer digital wallet of the buyer to a payee digital wallet of the seller. In some embodiments, the settlement module **340** may create a timestamped record of the online transfer in the digital ledgers **145-165** of the nodes **115-135** in the blockchain network **140** simultaneously. In addition, the settlement module **340** may also facilitate redemption of the token coin as financial currency in a financial account of the seller. The settlement module **340** may facilitate the exchange via various payment settlement means such as, but not limited to, banking transactions and digital wallet transactions. In some embodiment, the settlement module **340** may instruct the blockchain storage module **330** to update the symbolic monetary value of the token coin in the digital ledgers **145-165** after the redemption. The blockchain storage module **330** may reset or rebalance the symbolic monetary value of the token coin in the digital ledgers **145-165** to zero upon confirmation of the redemption by the settlement module **340**.

In some embodiments, the contract update module **317** may enable the seller and/or the buyer to access and update the real-world contract listed by the listing module **335** on the online transaction platform **330**. The contract update module **317** may enable the seller and/or the buyer to access the real-world contract from the digital wallet of the seller and/or the buyer respectively. The seller and/or the buyer may use the cryptographic keys or key pairs to decrypt and access the real-world contract. The contract update module **317** may apply one or more decryption methods upon verification of the cryptographic keys or key pairs provided by the seller and/or the buyer. The decryption methods applied by the contract update module **317** may be similar to the encryption methods, for example, the RSA method, applied to the timestamped records. In some embodiments, the contract update module **317** may convert the real-world contract to the digital contract in the natural language format upon decryption. The contract update module **317** may enable the seller and/or the buyer to update the contract details, such as, the contractual preconditions, the offerings, and/or the pricing details included in the offerings.

Upon confirmation of the digital contract being updated by the contract update module **317**, the smart contract generation module **320** may convert the digital contract in the natural language format to an updated real-world contract including the updated contractual preconditions, the offerings, and/or the pricing details. The updated real-world contract corresponds to the digital contract in the legal format having the one or more contractual clauses. The smart contract generation module **320** may also generate an updated smart contract corresponding to the updated contractual precondition in the updated real-world contract.

The token generation module **325** may generate an updated token coin corresponding to the updated offerings or the updated pricing details included in the updated offerings. The blockchain storage module **330** may store timestamped records of the updated real-world contract, the updated smart contract, the updated token coin in the digital ledgers **145-165** of the nodes **115-135** simultaneously in the blockchain network **140**. The blockchain storage module **330** may apply one or more encryption methods prior to recoding the updated real-world contract, updated smart contract, and the updated token coin in the blockchain network **140**. In some embodiments, the blockchain storage module **330** may randomise the updated contract details in the updated real-world contract during encryption. The blockchain storage module **330** may store the timestamped records after the consensus is ascertained with the nodes **115-135** in the blockchain network **140**. Further, the settlement module **340** may execute the updated smart contract stored by the blockchain storage module **330** when the updated contractual precondition is fulfilled by the seller and/or the buyer. The settlement module **340** may also facilitate the online transfer of the updated token coin from the payer digital wallet of the buyer to the payee digital of the seller.

It may be apparent from FIGS. **1-3** that that the seller device **105** and/or the buyer device **110** may also perform the online transactions via the online transaction platform **170** provided by other nodes **120-135**, similar to the node **115**. For example, the seller device **105** may perform the online transactions via the online transaction platform **170** provided by the node **115** and the buyer device **110** may perform the online transactions via the online transaction platform **170**

provided by the node **120**. Accordingly, the timestamped records of online transactions performed by the seller corresponding to the node **115** and the timestamped records of online transactions performed by the buyer corresponding to the node **120** are recorded in the digital ledgers **145-165** simultaneously upon ascertaining the consensus between the nodes **115-135** independently.

INDUSTRIAL APPLICABILITY

Referring to FIG. **4**, a flowchart of a method **400** for online transactions is disclosed. The method **400** includes a step **405** of establishing a digital contract between a seller and a buyer on an online transaction platform **170** (see FIGS. **1-3**). The online transaction platform **170** may be provided by a node, such as, the node **115** (see FIGS. **1-3**) in the blockchain network **140** (see FIGS. **1-3**).

Referring to FIG. **4-5**, the step **405** may include additional steps **406-408**. Accordingly, the step **405** may include the step **406** of creating the digital contract by the seller or the buyer by including contract details, such as, one or more contractual preconditions and one or more offerings to be exchanged between the seller and the buyer. The seller or the buyer may create the digital contract by means of a standalone application or a web application provided on the seller device **105** or the buyer device **110** respectively. The seller or the buyer may create the digital contract in a natural language format.

The step **405** may also include the step **407** of setting at least one pricing detail corresponding to the one or more offerings, such as products and/or services, in the digital contract. Examples of the services may include, but not limited to, artist performance fees, licensing fees, and related service fees. Examples of the products may include, but are not limited, digital or tangible artefacts, digital media, physical products, and additional complementary products. The seller or the buyer may set a single pricing detail for multiple offerings or set multiple pricing details corresponding to the multiple offerings in the digital contract. In some embodiments, the seller or the buyer may create multiple digital contracts with different pricing details corresponding to the multiple offerings in each digital contract.

The step **405** may also include step **408** of negotiating the one or more contractual preconditions, the one or more offerings, and the pricing details in the contract details between the seller and the buyer online. The negotiation may be via one or more online communication means, such as, chat and messages, between the seller and the buyer. The step **405** may also include a step (not shown) of encrypting the online negotiation between the seller and the buyer to ensure privacy and security.

The step **405** may also include the step **409** of finalizing the contract details based on the negotiation by the seller and/or the buyer on the online transaction platform **170** (see FIGS. **1-3**).

In some embodiments, the steps of creating the digital contract, setting the pricing details, negotiating and finalizing the contract details in step **405** may be executed by multiple nodes in multiple blockchain networks, such as, blockchain network **140** (see FIG. **1**).

Referring again to FIG. **4**, the method **400** includes at step **410** of converting the digital contract in the natural language format to the real-world contract automatically. The real-world contract may correspond to the digital contract in the legal format having the one or more contractual clauses. The one or more contractual clauses may include the contract details, such as, the one or more contractual preconditions and the one or more offerings. The step **410** may further include a step of generating a smart contract corresponding to at least one contractual precondition of the one or more contractual preconditions in the real-world contract. The smart contract may include one or more computer instructions generated corresponding to at least one contractual precondition in the contract details. The computer instructions in the smart contract may be correspond to specific automated actions to be performed, such as sending reminders, confirming delivery of service and/or product, and confirming payments, on a specified date and time as included in the real-world contract. In some embodiments, the smart contract may control the sale or transfer of a digital asset, such as, the token coin, on a specific date and time to the seller as included in the real-world contract.

An exemplary implementation and example of the step **405** of establishing the digital contract by the seller in the natural language format may be as follows:

Bookings start at [0-100,000 USD].

Sessions require [1-51] [days—weeks—months] advanced notice. Rush requests [can—will not] be considered.

[Open—Specific] requests are reviewed. [0|100-100|0] creative freedom is expected.

[Feel free to—Please do not] reference other tattoo artist's work. [0-10] visual references and body placement photos are best. Cover-up requests [will—will not] be reviewed.

There is [a—no] charge to create or edit custom artwork. Details of a proposed venue [are—are not] required. Draft reviews of my work [are—are not] scheduled.

Other/s

Your final invoice could have [0%-100%] variation.

For cancellations or no-shows, you pay [0%-100%] of a venue's reservation price. You may be charged [0%-100%] if you cancel or [0%-100%] within 48 hrs of your session.

[0%-100%] is charged for cancelling follow-up sessions.

[0-100,000 USD] can be billed for change requests. Recordings and work can remain under copyright protection with IP Rights sold separately. You might be requested to send a photo of your healed tattoo/art following your session. Recordings and work can remain under copyright protection with IP Rights sold separately.

[Free/Text]

[CHECKBOX] I have read, understand and agree to these contract details

New Artwork

a. [new posting] notification to following PORTER & connected members immediately

"[PROFILE LINK] just posted"

b. [new posting] notification to following members six hours after upload

"[Profile Link] posted"

(ii) CONFIRMED COLLABORATION

a. [month booking date] notification to commissioning member 28 days before set date "Just around a month to go before [LINK & COLLABORATION TITLE]!"

b. [two weeks booking date] notification to commissioning member 14 days before set date

"Only two weeks before [LINK & COLLABORATION TITLE]. Please keep your skin in good condition. Don't go sunbathing or damage your canvas!"

c. [24 hrs booking date] notification to commissioning member 24 hrs before set date "[LINK & COLLABO-

RATION TITLE] is tomorrow! Please be sure get to plenty of rest tonight. Wear comfortable clothes and please eat something an hour or so before your session."

d. [following booking date] notification to commissioning member 1 hr after confirmed completion "Congratulations! Please remember the next four weeks is a critical healing time. Keep your body/art clean. Avoid harsh or dirty environments. You can typically shower right away but do not submerge the area. Keep any protective cover fresh, change as often as needed. Wear loose-fitting clothes, allowing the area to breathe. Good aftercare is important. Specifics will depend on your daily routine and location."

e. [following booking date] notification to commissioning member 28 days after completion "Congratulations again! Please don't forget to send me a photo of the healed tattoo/art"

An exemplary implementation and example of the step **410** of converting the digital contract to the real-world contract may be as follows:

[TATTOO/ARTIST] ("Tattoo/Artist"), and [PURCHASING MEMBER] ("Purchasing Member"), agree to incorporate by reference the clauses 7.2a to 7.2o, associated documentation, and other written stipulations to form part of this collaboration contract [CONTRACT #] ("Contract")

WHAT|"[TEXT/COLLABORATION DESCRIPTION]" also as in [PHOTOS] ("Art/Work") TERMS|Immediately upon the application of the Art/Work by the Tattoo/Artist, the Purchasing Member shall pay the fee due to the Tattoo/Artist in the amount and currency equivalent to [PRICE] WHEN+WHERE ARTWORK IS APPLIED|[TEXT] ("Location") on or by [COMPLETION DATE]

[X] [Y] TOGETHER|Tattoo/Artist and Purchasing Member shall in good faith take every reasonable measure to maintain a suitable, safe, hygienic and comfortable working area, Location and environment during the Art/Work's application

[X] [Y] ORIGINAL WORK|Tattoo/Artist represents and warrants that to the best of his or her knowledge, the Art/Work assigned hereunder is original and has not previously been published, or that consent to use has been obtained on an unlimited and unconditional basis

[X] [Y] COPYRIGHT SOLD SEPARATELY|Purchasing Member enjoys non-commercial and personal use of the Art/Work. Purchasing Member shall not have any copyright, moral right or other intellectual property rights, titles or interests whatsoever to the Art/Work ("IP Rights"). Tattoo/Artist retains all IP Rights to the Art/Work, whether such rights arise from law, contract or other source of legal or equitable obligation. If Purchasing Member intends to obtain any such IP Rights, the concurrent or subsequent execution and registration of an IP Sales Contract between the former and the Tattoo/Artist (also known as "Owner"), shall necessarily be required

[X] [Y] NO EXTRA GUESTS|Except for those persons explicitly stipulated by both parties, Purchasing Member shall neither invite nor permit any additional persons, also known as Attendees, to access private, restricted or other similarly controlled areas utilized during the Art/Work's application

[X] [Y] NO RECORDING|Purchasing Member shall not permit any person to photograph, record, broadcast, communicate, digitally stream or in any manner whatsoever record, publish, share or transmit any copy, image or representation of the Art/Work, including any related conduct or activities of application

[X] [Y] DAMAGES|During the Art/Work's application Purchasing Member shall be comprehensively and personally liable to compensate the Tattoo/Artist or other third party, for any injury or illness sustained and for any damages caused to the said artist or party or to the equipment, working areas or Locations when said injury, illness or damages have been objectively evidenced or proven to have resulted from the act or omission involving fault or negligence of the Purchasing Member. Payable charges may include but not limited to verified costs incurred by Tattoo/Artist to compensate for, repair or replace similarly damaged equipment

To the full extent permitted by law or equity, and notwithstanding anything else in this agreement, neither party shall be liable for any incidental, consequential, exemplary, punitive, indirect damages of any kind including lost profits, lost data, or costs of procuring substitute services, whether in an action in contract, quasi-contract, delict, quasi-delict or other source of legal or equitable obligation, even if such party has been advised of the possibility of such damages, except in cases of gross negligence or wilful misconduct

[X] [Y] CONFIDENTIAL|Tattoo/Artist and Purchasing Member agree to protect each other's confidential and proprietary information, otherwise known as private details. Each shall endeavour to do so for such information disclosed in the course of contract negotiations, perfection, implementation and consummation

SET|The transfer or payment of the fee shall be deemed to confirm the successful completion of the Contract. A perfected and signed contract may not be modified, amended or supplemented except by the express written consent of both parties. Neither party may delegate its contract obligations except with the written consent of the other party. Neither party may assign its contract rights, such as the right to collect payment, without the written consent of the other party, which consent shall not be unreasonably withheld. General portfolio displays or depictions of the Art/Work on [TATTOO/ARTIST'S PROFILE] are permitted. Contract Dispute and Settlement Billings are to be ruled on by the Tribunal. Any situation resulting in litigation, initiated by either Party, shall be brought within the courts and governed by the laws of [TATTOO/ARTIST'S PROFILE LOCATION]

AGREED|PARTIES HAVE READ, UNDERSTOOD AND AGREE TO BE BOUND|Via electronic methods, personal signatures and private digital keys are inscribed on registered documents holding both Purchasing Member and Tattoo/Artist as formally, contractually, legally and equitably bound. Purchasing Member and Tattoo/Artist respectively acknowledges that he or she has been given adequate opportunity to review, bargain and agree with the contract details, including clauses 7.2a through 7.2o, associated documentation and has accepted each and every one of the legally, equitably or materially significant roles, liabilities, duties, risks, obligations and responsibilities contained therein. All information has been presented with ample time and space to allow for measured consideration by both parties, before official payment and registration of these contract details have been authorized by them| [SIGNING DATE]

Referring again to FIG. **4**, the method **400** may also include at step **415** of generating a cryptographic digital token or the token coin corresponding to at least one offering of the one or more offerings in the contract details of the real-world contract. The token coin generated may correspond to a symbolic monetary value equivalent to a cumulative price of the offerings in the real-world contract.

Further, the method **400** may include a step **420** of storing a timestamped record of the real-world contract, the smart contract, and the token coin in multiple digital ledgers, such as, the digital ledgers **145-165** (as shown in FIG. **1**) in the blockchain network **140** (as shown in FIG. **1**) and/or multiple blockchain networks similar to the blockchain network **140**. The step **420** may also include a step of assigning unique numeric or alphanumeric hash values to the real-world contract, the smart contract and the token coin for tracking, identification, and retrieval across digital ledgers, such as, the digital ledgers **145-165**. The step **420** may also include a step of grouping the real-world contract, the smart contract and the generated token coin based on the unique numeric or alphanumeric hash values. In some embodiments, the real-world contract, the smart contract and the generated token coin may hold references to each other for tracking and identification. Further, the step **420** may also include a step of encrypting the contract details in the real-world contract using one or more encryption methods and generating cryptographic keys or key pairs corresponding to the encrypted real-world contract. The step of encryption may further include a step of randomising the contract details in the real-world contract.

Further, in some embodiments, the step **420** may be performed after a consensus between different nodes, such as the nodes **115-135** in the blockchain network **140** (see FIG. **1**) is ascertained. The consensus may be ascertained by sharing the unique numeric or alphanumeric hash value and verifying the cryptographic key-pairs at the nodes **115-135** independently in the blockchain network **140**. Timestamped records of the real-world contract, the smart contract, and the token coin may be stored in the digital ledgers **145-165** (see FIG. **1**) at the nodes **115-135** after the verification. The sharing and verification between the nodes **115-135** ensure privacy, security, accuracy, and time-stamped validation of the real-world contract in the blockchain network **140**.

In some embodiments, the method **400** may further include at step (not shown) of listing the encrypted real-world contract and the token coin publicly on the online transaction platform, for example, the online transaction platform **170** (see FIGS. **1-3**). In some embodiments, the step of listing may also include listing the real-world contract and the token coin associated with the real-world contract in a digital wallet of the seller and/or the buyer directly for private access. The listing may also display the pricing details associated with the digital contract as determined by the symbolic monetary value of the token coin associated with the real-world contract. The seller or the buyer may use the cryptographic keys or key pairs to decrypt the encrypted real-world contract listed. The real-world contract may be converted to the digital contract in the natural language format upon decryption.

The method **400** may also include a step **425** of executing the stored smart contract when at least one precondition in the real-world contract is fulfilled by the seller and/or the buyer. The step **425** may performed on a specific date and time as included in the real-world contract. Further, the method **400** may also include a step **430** of transferring the stored token coin from the buyer to the seller. The token coin may be transferred from a payor digital wallet of the buyer to a payee digital wallet of the seller. The step **430** may also include a step of creating a timestamped record of the transfer of the token coin in digital ledgers, such as, the digital ledgers **145-165** (see FIG. **1**) in the blockchain network **140** and/or the multiple blockchain networks similar to the blockchain network **140**. In some embodiments, the method **400** may also include a step of redeeming the transferred token coin for financial currency by the seller via different payment settlement means such as banking transactions and digital wallet transactions. The method **400** may also include a step of rebalancing the symbolic monetary value of the token coin in the digital ledgers such as, the digital ledgers **145-165** after the redemption.

FIG. **6** is a flowchart of a method **600** for updating the stored real-world contract described with reference to FIG. **4** and FIG. **5**. The method **600** may include a step of converting the stored real-world contract to a digital contract in a natural language format in order to facilitate the updating of the stored real-world contract. The conversion may include decryption of the stored real-world contract by means of cryptographic keys or key pairs by the seller and/or the buyer. Further, the method **600** may include a step **605** of updating the digital contract in the natural language format by the seller or the buyer. The step **605** may include a step of updating one or more contractual preconditions and/or one or more offerings in the contract details of the digital contract. The seller may also update pricing details corresponding to the one or more offerings in step **605**.

The method **600** may also include a step **610** of converting the updated contract details including the pricing details in the digital contract to an updated real-world contract. The updated real-world contract may correspond to the updated digital contract in a legal format having one or more contractual clauses. The step **610** may also include a step of generating an updated smart contract corresponding the updated real-world contract. In addition, the method **600** includes a step **615** of generating an updated token coin corresponding to the updated pricing details of the updated offerings in the real-world contract.

Further, the method **600** may also include a step **620** of recording the updated real-world contract, the updated smart contract, and the updated token coin in the digital ledgers, such as the digital ledgers **145-165** (as shown in FIG. **1**) in the blockchain network **140** (as shown in FIG. **1**) and/or the multiple blockchain networks. In some embodiments, the step **620** include a step of assigning unique numeric or alphanumeric hash values to the updated real-world contract, the updated smart contract, and the updated token coin. In some embodiments, the step **620** may also include a step of encrypting the updated contract details in the updated real-world contract using one or more encryption methods. The encryption may further include randomising the contract details in the updated real-world contract. The step **620** may include a step of encrypting the updated smart contract and the updated token coin and generating cryptographic keys or key pairs.

In some embodiments, the step **620** may be initiated after a consensus is ascertained between different nodes, such as the nodes **115-135** in the blockchain network **140** (see FIG. **1**). The consensus may be ascertained at by sharing the unique numeric or alphanumeric hash value among the nodes **115-135** and verifying the cryptographic key-pairs at the nodes **115-135** independently in the blockchain network **140**. Timestamped records of the updated real-world contract, the updated smart contract, and the updated token coin may be stored and recorded in the digital ledgers **145-165** at the nodes **115-135** after the verification.

The method **600** may also include a step **625** of executing the updated smart contract recorded in the step **620** when at least one precondition in the updated real-world contract is fulfilled by the seller and/or the buyer. The step **625** may performed on a specific date and time as stated in the updated real-world contract. Further, the method **600** may also include a step **630** of transferring the updated token coin from the buyer to the seller. The updated token coin may be transferred from a payor digital wallet of the buyer to a payee digital wallet of the seller. The step **630** may also include a step of creating a timestamped record of the transfer of the updated token coin in digital ledgers, such as, the digital ledgers **145-165** in the blockchain network **140** and/or similar multiple blockchain networks.

FIG. **7** is a schematic illustration of an exemplary implementation of an online transaction between a seller **705** and a buyer **710** via an online transaction platform **715** provided by at least one of the nodes, such as the nodes **115-135** (see FIGS. **1-3**). The seller **705** and the buyer **710** may be registered users in the online transaction platform **715** with records of personal details, bank account details, and wallet details corresponding to the seller and/or the buyer available in the online transaction platform.

The seller **705** creates a digital contract **720** on the online transaction platform **715** to offer one or more products and/or services. The seller **705** may set a single price corresponding to the products and/or services in the digital contract **720**. The seller **705** may also set multiple prices corresponding to the products and/or services in the digital contract **720**. The seller **705** may also set additional contractual preconditions and offerings corresponding to the products and/or services in the digital contract **720**. In some embodiments, the buyer **710** may communicate with the seller **705** via the online transaction platform **715** to negotiate the contract details, for example, the price or the multiple prices associated with the products and/or services provided by the seller **705**, prior to or during the creation of the digital contract **720**. The seller **705** and the buyer **710** may negotiate via chat, contract editing tools, and notes provided in the online transaction platform **715**. Upon negotiation, the seller **705** or the buyer **710** may make changes to the contract details and the pricing in the digital contract **715**. Accordingly, the seller **705** and the buyer **710** may come to an agreement, finalize the contract details, and establish the digital contract **720**. The digital contract **720** established by the seller **705** or the buyer **710** is converted into a real-world contract **721** with one or more contractual clauses corresponding to the products and/or services and the associated contractual preconditions and offerings offered by the seller **705**. A smart contract **722** is generated based on the contract details in the real-world contract **721**. A token coin **723** may be generated corresponding to a price set by the seller **705** corresponding to the products and/or services. The token coin **723** with a cumulative price of the services and/or products may be generated when the seller **705** sets multiple prices corresponding to the products and/or services. The seller **705** may choose to send the real-world contract **721** to the buyer **710** directly and privately via the online transaction platform **715**. The seller **705** may also choose to list the real-world contract **721** and the token coin **723** publicly and invite the buyer **710** to access the real-world contract **721**.

In some embodiments, the seller **705** or the buyer **710** may wish to update the contract details in the real-world contract **721**. Accordingly, the seller **705** or the buyer **710** make changes to the contract details, such as the pricing details, the contractual preconditions, and/or the offerings in the real-world contract **721**. The changes made to the real-world contract **721** generates an updated real-world contract **721** and an updated smart contract **722**. An updated token coin **723** may be generated corresponding to the change in the pricing details of the products and/or services in the updated real-world contract **721**. Upon final agreement between the seller **705** and the buyer **710**, the buyer **710** may make a token payment **725** corresponding to a monetary value of the updated token coin **723**. The token payment **725** may be equivalent to the monetary value of the updated token coin **723**. In some embodiments, the token payment **725** may a partial initial payment corresponding to the monetary value of the updated token coin **723**. The buyer **710** may confirm the receipt of the services and/or products by the seller **705** on the online transaction platform **715**. The smart contract **720** may then automatically make an additional token payment **725** corresponding to the updated value of the token coin **723** on behalf of the buyer **710** when a partial payment was made by the buyer **710** initially. Upon completion of the token payment **725**, the token coin **723** may be transferred to a digital wallet assigned to the seller **705** in the online transaction platform **715**. The seller **705** may redeem the transferred token coin **723** in the digital wallet for financial currency as preferred by the seller **705**. Value of the token coin **723** may be rebalanced after the redemption. The financial currency may correspond to a local currency, cryptocurrency, or other forms of the financial currency. In some instances, the financial currency may be redeemed in a bank account owned by the seller **705**.

In the preceding specification, the present disclosure and its advantages have been described with reference to specific embodiments. However, it will be apparent to a person of ordinary skill in the art that various modifications and changes can be made, without departing from the scope of the present disclosure, as set forth in the claims below. Accordingly, the specification and figures are to be regarded as illustrative examples of the present disclosure, rather than in restrictive sense. All such possible modifications are intended to be included within the scope of present disclosure.

I claim:

1. A system for one or more online transactions, comprising:

a plurality of interconnected transaction servers, wherein each interconnected transaction server includes a digital ledger;

a first electronic device of a seller in communication with at least one interconnected transaction server of the plurality of interconnected transaction servers via a network;

a second electronic device of a buyer in communication with the at least one interconnected transaction server via the network; and

an online transaction platform provided by the at least one interconnected transaction server to facilitate the one or more online transactions between the seller and the buyer via the network, wherein the at least one interconnected transaction server comprises a processor configured to:

facilitate establishment of a first digital contract in a natural language format based on an encrypted online negotiation between the seller and the buyer on the online transaction platform via the first electronic device and the second electronic device respectively, the first digital contract including one

or more contractual preconditions and one or more offerings to be exchanged between the seller and the buyer;

automatically convert the first digital contract in the natural language format to a second digital contract in a legal format having one or more contractual clauses, the one or more contractual clauses including the one or more contractual preconditions and the one or more offerings;

generate a smart contract that includes one or more computer instructions corresponding to at least one contractual precondition of the one or more contractual preconditions;

generate a cryptographic digital token corresponding to the one or more offerings in the first or second digital contract;

assign a symbolic monetary value equivalent to a cumulative price of the one or more offerings to the cryptographic digital token generated;

store timestamped records of the first digital contract, the second digital contract, the smart contract, and the cryptographic digital token respectively in the digital ledger of the at least one interconnected transaction server and the plurality of interconnected transaction servers simultaneously; and

execute the smart contract when the at least one contractual precondition is fulfilled by the seller, the buyer, or both the seller and the buyer, and facilitate an online transfer of the cryptographic digital token from a payer digital wallet of the buyer to a payee digital wallet of the seller.

2. The system of claim **1**, wherein the processor is configured to facilitate:

creation of the first digital contract in a natural language format by the seller, the buyer, or both the seller and the buyer;

setting at least one pricing detail corresponding to the at least one offering by the seller, the buyer, or both the seller and the buyer;

the encrypted online negotiation of the one or more contractual preconditions, the one or more offerings, and the at least one pricing detail between the seller and the buyer; and

finalizing the one or more contractual preconditions, the one or more offerings, and the at least one pricing detail based on the online negotiation by the seller, the buyer, or both the seller and the buyer, on the online transaction platform.

3. The system of claim **1**, wherein the processor is configured to:

enable the seller, the buyer, or both the seller and the buyer, to update the first or second digital contract by updating at least one of the at least one contractual precondition and the at least one offering,

generate an updated smart contract corresponding to the at least one updated contractual precondition,

generate an updated cryptographic digital token corresponding to the at least one updated offering in the updated digital contract,

store timestamped records of the updated digital contract, the updated smart contract, the updated cryptographic digital token respectively in the digital ledger of the at least one interconnected transaction server and the plurality of interconnected transaction servers simultaneously, and

execute the updated smart contract when the at least one updated contractual precondition is fulfilled and facilitate the online transfer of the updated cryptographic digital token from the payer digital wallet of the buyer to the payee digital of the seller.

4. The system of claim **1**, wherein the processor is configured to facilitate redemption of the cryptographic digital token as financial currency in a financial account of the seller and update the cryptographic digital token in the digital ledger after the redemption.

5. A method for one or more online transactions, comprising:

establishing a first digital contract in a natural language format to a second digital contract in a legal format having one or more contractual clauses, the one or more contractual clauses including the one or more contractual preconditions and the one or more offerings;

generating a smart contract that includes one or more computer instructions corresponding to at least one contractual precondition of the one or more contractual preconditions;

generating a cryptographic digital token corresponding to the one or more offerings in the first or second digital contract;

assigning a symbolic monetary value equivalent to a cumulative price of the one or more offerings to the cryptographic digital token generated;

storing timestamped records of the digital contract, the second digital contract, the smart contract, and the cryptographic digital token respectively in a plurality of digital ledgers simultaneously;

executing the smart contract when the at least one contractual precondition is fulfilled by the seller, the buyer, or both the seller and the buyer; and

transferring the cryptographic digital token from a payer digital account of the buyer to a payee digital account of the seller upon execution.

6. The method of claim **5**, wherein the creating of the s digital contract includes:

setting at least one pricing detail corresponding to the at least one offering by the seller, the buyer, or both the seller and the buyer;

negotiating the one or more contractual preconditions, the one or more offerings, and the at least one pricing detail between the seller and the buyer; and

finalizing the one or more contractual preconditions, the one or more offerings, and the at least one pricing detail based on the negotiation by the seller, the buyer, or both the seller and the buyer, on an online transaction platform.

7. The method of claim **5**, further including:

updating the first or second digital contract by the seller, the buyer, or both the seller and the buyer, wherein the updating includes updating the at least one contractual precondition and the at least one offering;

generating an updated smart contract corresponding to at least one updated contractual precondition in the updated digital contract;

generating an updated cryptographic digital token corresponding to at least one updated offering in the updated digital contract;

storing timestamped records of the updated digital contract, the updated smart contract, the updated cryptographic digital token respectively in the plurality of digital ledgers simultaneously;

executing the updated smart contract when the at least one updated contractual precondition is fulfilled by the seller, the buyer, or both the seller and the buyer; and

facilitating the online transfer of the updated cryptographic digital token from the payer digital account of the buyer to the payee digital account of the seller.

8. One or more non-transitory computer-readable media comprising computer-executable instructions that, when executed by a computing system, cause the computing system to perform a method for one or more online transactions comprising:

establishing a first digital contract in a natural language format based on an encrypted online negotiation between a seller and a buyer, wherein the establishing includes creating the first digital contract by the seller, the buyer, or both the seller and the buyer, the first digital contract including one or more contractual preconditions and one or more offerings to be exchanged between the seller and the buyer;

automatically converting the first digital contract in the natural language format to a second digital contract in a legal format having one or more contractual clauses, the one or more contractual clauses including the one or more contractual preconditions and the one or more offerings;

generating a smart contract that includes one or more computer instructions corresponding to at least one contractual precondition of the one or more contractual preconditions;

generating a cryptographic digital token corresponding to the one or more offerings in the first or second digital contract;

assigning a symbolic monetary value equivalent to a cumulative price of the one or more offerings to the cryptographic digital token generated;

storing timestamped records of the first digital contract, the second digital contract, the smart contract, and the cryptographic digital token respectively in a plurality of digital ledgers simultaneously;

executing the smart contract when the at least one contractual precondition is fulfilled by the seller, the buyer, or both the seller and the buyer; and

transferring the cryptographic digital token from a payer digital account of the buyer to a payee digital account of the seller upon execution.

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